



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,757	12/30/2003	Nikolai G. Nikolov	6570P037	9105
45062 7590 10/12/2007 SAP/BLAKELY 1279 OAKMEAD PARKWAY SUNNYVALE, CA 94085-4040				
			EXAMINER KISS, ERIC B	
			ART UNIT 2192	PAPER NUMBER
			MAIL DATE 10/12/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/749,757	Applicant(s) NIKOLOV, NIKOLAI G.	
	Examiner Eric B. Kiss	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :20050210, 20061120, 20070206, 20070419.

DETAILED ACTION

1. Claims 1-39 have been examined.

Drawings

2. The drawings are objected to because they fail to comply with 37 CFR § 1.84 (l), (m), (p)(3). (*See* Figures 6B, 9A, 9B, 9C, 9D, 9E, 15B, 19B, 19C, 19D, 19E (containing text on hatched/shaded surfaces); Figures 9B, 9C, 9D, 9E, 19B, 19C, 19D, 19E (containing text substantially smaller than 0.32 cm (1/8 inch)).) Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code. (Specification paragraph [0160].) Applicant is required to

Art Unit: 2192

delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Rejections - 35 USC § 101

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 14-39 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Descriptive material can be characterized as either “functional descriptive material” or “nonfunctional descriptive material.” In this context, “functional descriptive material” consists of data structures and computer programs which impart functionality when employed as a computer component. (The definition of “data structure” is “a physical or logical relationship among data elements, designed to support specific data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993).) “Nonfunctional descriptive material” includes but is not limited to music, literary works and a compilation or mere arrangement of data. Both types of “descriptive material” are nonstatutory when claimed as descriptive material *per se*. *In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory).

Data structures not claimed as embodied in computer-readable media are descriptive material *per se* and are not statutory because they are not capable of causing functional change in the computer. *See, e.g., In re Warmerdam*, 33 F.3d 1354, 1361, 31 USPQ2d 1754, 1760 (claim to a data structure *per se* held nonstatutory). Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects

Art Unit: 2192

of the invention which permit the data structure's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a data structure defines structural and functional interrelationships between the data structure and the computer software and hardware components which permit the data structure's functionality to be realized, and is thus statutory.

Similarly, computer programs claimed as computer listings *per se*, *i.e.*, the descriptions or expressions of the programs, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and functional interrelationships between the computer program and other claimed elements of a computer which permit the computer program's functionality to be realized. In contrast, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and functional interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory. *See In re Lowry*, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035.

Claims 14-26 recite systems comprising a series of elements reasonably interpreted as software. Accordingly, claims 14-26 appear to merely set forth functional descriptive material *per se*, which is nonstatutory.

Claims 27-39 purport to set forth articles of manufacture including program code. Although the specification (aside from original claims 27-39) fails to explicitly describe such articles, the examiner believes they are intended to correspond to the machine-readable media described in paragraph [0164] of the specification. Such machine-readable media are disclosed as embracing propagation media including data signals embodied in a carrier wave.

Art Unit: 2192

(Specification paragraph [0164].) Accordingly, claims 27-39 can be reasonably construed to cover signals encoded with functional descriptive material. Claims involving signals encoded with functional descriptive material do not fall within any of the categories of patentable subject matter set forth in 35 U.S.C. § 101, and such claims are therefore ineligible for patent protection. *See* 1300 OG 142 (November 22, 2005) (in particular, see Annex IV(c)); *see also In re Nuijten*, Case No. 2006-1371, at *11 (Fed. Cir., September 20, 2007).

6. To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. § 101 (non-statutory) above are further rejected as set forth below in anticipation of Applicant amending these claims to place them within the four statutory categories of invention.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 4, 17, and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4, 17, and 30 contain the trademark/trade name JAVA. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. *See Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the

Art Unit: 2192

trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a particular software architecture and, accordingly, the identification/description is indefinite.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 1-3, 5-12, 14-16, 18-25, 27-29, and 31-38 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,662,359 (Berry et al.).

Regarding claim 1, *Berry et al.* discloses a method for tracing program flow within an application comprising:

providing options for modifying bytecode of the application at a plurality of levels of precision, each of the levels of precision specifying a particular set of methods of the application to be traced (*see, e.g., Berry et al.* at col. 5, line 59, through col. 6, lines 45; col. 7, lines 5-11 (selective instrumentation of some or all methods));

receiving a request to modify the bytecode at one of the of levels of precision (*see, e.g., Berry et al.* at col. 5, line 59, through col. 6, lines 45);

responsively modifying the bytecode at the requested level of precision (*see, e.g., Berry et al.* at col. 6, line 51, through col. 7, line 17);

executing the application (*see, e.g., Berry et al.* at col. 7, lines 44-45); and

registering method invocations associated with the particular set of methods specified by the level of prevision (*see, e.g., Berry et al.* at col. 6, lines 55-65).

Regarding claim 2, *Berry et al.* further discloses one of the levels of precision comprises all methods within the application (*see, e.g., Berry et al.* at col. 7, lines 5-11 (selective instrumentation of some or all methods)).

Regarding claim 3, *Berry et al.* further discloses one of the levels of precision comprises all methods within a package of the application (*see, e.g., Berry et al.* at col. 7, lines 5-11 (selective instrumentation of some or all methods)).

Regarding claim 5, *Berry et al.* further discloses one of the levels of prevision comprises all methods within a particular class file of the application (*see, e.g., Berry et al.* at col. 7, lines 5-11 (selective instrumentation of some or all methods)).

Regarding claim 6, *Berry et al.* further discloses one of the levels of precision comprises individually identified methods of the application (*see, e.g., Berry et al.* at col. 7, lines 5-11 (selective instrumentation of some or all methods)).

Regarding claim 7, *Berry et al.* further discloses modifying the bytecode comprises:
inserting a start method invocation prior to each method of the set of methods and
inserting an end method invocation following each method of the set of methods (*see, e.g., Berry et al.* at col. 6, line 51, through col. 7, line 17).

Regarding claim 8, *Berry et al.* further discloses storing method-related information associated with the method invocations of each of the particular set of methods (*see, e.g., Berry et al.* at col. 6, line 51, through col. 7, line 17).

Regarding claim 9, *Berry et al.* further discloses the method-related information comprises an amount of time it takes for each method within the set of methods to complete (*see, e.g., Berry et al.* at col. 6, line 51, through col. 7, line 17).

Regarding claim 10, *Berry et al.* further discloses the method-related information comprises a number times that each method of the set of methods is executed (*see, e.g., Berry et al.* at col. 6, line 51, through col. 7, line 17).

Regarding claim 11, *Berry et al.* further discloses the method-related information comprises input and/or output parameters associated with each method of the set of methods (*see, e.g., Berry et al.* at col. 6, lines 1-16).

Regarding claim 12, *Berry et al.* further discloses constructing a hierarchical representation of the particular set of methods, the hierarchical representation including an indication of an amount of time it takes for each of the particular set of methods to complete (*see, e.g., Berry et al.* at col. 6, lines 1-16).

Regarding claims 14-16 and 18-25, these are system/software versions of the claimed methods discussed above (claims 1-3 and 5-12). *Berry et al.* further discloses the use of such systems/software to implement the prescribed methods (*see, e.g., Berry et al.* at col. 14, lines 30-44), and all other limitations have been addressed as set forth above.

Regarding claims 27-29 and 31-38, these are article versions of the claimed methods discussed above (claims 1-3 and 5-12). *Berry et al.* further discloses the use of such articles to implement the prescribed methods (*see, e.g., Berry et al.* at col. 14, lines 30-44), and all other limitations have been addressed as set forth above.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 13, 26, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,662,359 (Berry et al.) and U.S. Patent No. 6,836,878 (Cuomo et al.).

Regarding claims 13, 26, and 39, in addition to the disclosure applied above to claims 1, 14, and 27, although *Berry et al.* fails to expressly disclose generating a graphical tree reflecting the hierarchical representation within a graphical user interface, wherein the graphical tree includes a separate entry for each method within the set of methods, *Cuomo et al.* teaches that such graphical trees are known in the context of object-oriented development systems as a known means of providing useful information about object-oriented classes and methods (*see, e.g., Cuomo et al.* at col. 2, line 57, through col. 3, line 17; Fig. 3A). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate such a graphical tree into the development environment of *Berry et al.* to gain the benefit of providing to a developer a greater understanding of the class library that the developer is working with.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2192

14. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric B. Kiss whose telephone number is (571) 272-3699. The Examiner can normally be reached on Tue. - Fri., 7:00 am - 4:30 pm. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Any inquiry of a general nature should be directed to the TC 2100 Group receptionist: 571-272-2100.



Eric B. Kiss
October 10, 2007